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**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

<b>MITUTOYO CORPORATION,</b>	)	
<b>MITUTOYO AMERICA CORP. and</b>	)	
<b>C.E. JOHANSSON AB,</b>	)	
	)	
<b>Plaintiffs,</b>	)	
	)	
<b>v.</b>	)	<b>No. 03 C 0990</b>
	)	
<b>CENTRAL PURCHASING, INC.,</b>	)	
	)	
<b>Defendant.</b>	)	

**MEMORANDUM OPINION**

SAMUEL DER-YEGHIAYAN, District Judge

This matter is before the court on the claim constructions in the instant action on United States Patent No. 4,743,902 (“’902 Patent”). We construe the pertinent claims in accordance with the findings provided below.

**BACKGROUND**

Plaintiff Mitutoyo Corporation (“Mitutoyo”) brought the instant patent infringement suit against Defendant Central Purchasing, Inc. (“Central”). The ‘902 Patent covers “[a] system for measuring the relative movement of one object with respect to another, such as the movement of a slide with respect to a scale of a measuring instrument utilizes the capacitative effect of a series of electrodes

associated with a slide and another series of electrodes associated with the cooperating scale, the changes in capacity caused by relative movement between the two members being analyzed by an electronic circuit.” U.S. Patent No. 4,743,902 (issued May 10, 1988).

The controversy between the parties began in 1992, when Mitutoyo placed Central on notice that Central allegedly infringed the ‘902 patent through Central’s sale of digital calipers manufactured by a company called Norwood (“Norwood Calipers”). After negotiations, in 1994 the parties agreed that Central would cease its sales of the Norwood Calipers. In 1995, however, Central brought an action against Mitutoyo seeking to obtain a declaration stating that the ‘902 Patent was invalid and thus unenforceable. Mitutoyo eventually prevailed in the suit and the ‘902 Patent remains valid.

In 2002, Central began selling a slightly different digital caliper manufactured by Guanglu Measuring Instrument Co., Ltd (“Guanglu Calipers”). Mitutoyo brought the present action alleging that the sale of the Guanglu Calipers infringes the ‘902 Patent and that Central breached its 1994 contract with Mitutoyo. On March 30, 2004, we granted Mitutoyo’s motion for summary judgment on the issue of patent validity. On October 27, 2004, the parties participated in a Markman hearing in this court in accordance with *Markman v. Westview Instrs., Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995). Each side gave a presentation to explain the science and technological terminology involved in the suit and presented oral arguments. Following the hearing, the parties submitted final claim construction briefs.

## LEGAL STANDARD

Patent Infringement analysis involves two steps. First, the court determines the scope of the claims as a matter of law and second, a finder of fact makes a factual comparison between the properly construed claims and the accused device or method to determine whether there was infringement. *Teleflex, Inc. v. Ficosa North America Corp.*, 299 F.3d 1313, 1323 (Fed. Cir. 2002); *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454 (Fed. Cir.1998)(*en banc*); *Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc.*, 336 F.3d 1308, 1313 (Fed. Cir. 2003); *Vitronics Corp. v. Conceptronic, Inc.* 90 F.3d 1576, 1581-82 (Fed. Cir. 1996); see also *Amazon.com, Inc. v. BarnesAndNoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001)(stating that it is imperative that the court properly construe the claims, because an improper claim construction “may distort the infringement and validity analysis.”).

Claims construction, including the construction of terms of art in a patent, is performed by the court since the determination is purely a matter of law. *Vitronics Corp.*, 90 F.3d at 1581-82; *Cybor Corp.*, 138 F.3d at 1454-56. The focus of the claims construction should “begin and remain centered on the language of the claims themselves. . . .” *Intellectual Prop. Dev., Inc.*, 336 F.3d at 1314. In determining the meaning of claims, a court should consider the intrinsic evidence which includes the claims and specification of the patent, as well as the prosecution history, if available. *Vitronics*, 90 F.3d at 1582; *Teleflex, Inc.*, 299 F.3d at 1324-26 (Fed. Cir. 2002);

*Markman*, 52 F.3d at 979; *see also Unitherm Food Systems, Inc. v. Swift Eckrich, Inc.*, 375 F.3d 1341, 1359 (Fed. Cir. 2004)(stating that “[t]he prosecution history is . . . the record of all correspondence between the patentee and the PTO. . . .”). The claims construction should be based upon an objective standard under which the court should determine “what one of ordinary skill in the art at the time of the invention would have understood the term to mean.” *Markman*, 52 F.3d at 986 (stating that the “focus in construing disputed terms in claim language is not the subjective intent of the parties to the patent contract when they used a particular term.”).

There is a “heavy presumption” that the terms used in claims “mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art.” *Texas Digital Sys., Inc. v. Telegenex, Inc.*, 308 F.3d 1193, 1202 (Fed. Cir. 2002); *see also Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1371 (Fed. Cir. 2003)(stating that there is a “strong presumption” that claim terms have “their ordinary meaning as viewed by one of ordinary skill in the art.”). The ordinary and customary meaning of a claim term may be discerned by looking at sources such as: 1) the language of the claims, 2) “dictionaries and treatises,” and 3) “the written description, the drawings, and the prosecution history.” *Intellectual Prop. Dev., Inc.*, 336 F.3d at 1314 (stating that a court may consult dictionaries and treatises to determine the ordinary and customary meaning of the claim term); *see also Texas Digital Systems, Inc.*, 308 F.3d at 1203(speaking about “[d]ictionaries, encyclopedias and treatises, publicly available at the time the patent

is issued” and stating that “[a]s resources and references to inform and aid courts and judges in the understanding of technology and terminology, it is entirely proper for both trial and appellate judges to consult these materials at any stage of a litigation, regardless of whether they have been offered by a party in evidence or not.”).

If the claim terms are consistent with more than one dictionary definition for those words then “the claim terms may be construed to encompass all such consistent meanings.” *Id.* at 1203. The presumption that a term has a meaning synonymous with its ordinary meaning which is generally consistent with the dictionary definition may be rebutted if the “patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning.” *Id.* at 1204. Extrinsic evidence such as expert testimony may only be considered in situations where the court cannot properly understand the meaning of the claim terms because the language in the claims is ambiguous. *Id.* at 1212; *Vitronics*, 90 F.3d at 1583 (stating that “[i]n most situations” a review of the intrinsic evidence will suffice and that extrinsic evidence may only be relied upon when the intrinsic evidence does not “resolve any ambiguity in a disputed claim term.”); *Apex Inc.*, 325 F.3d at 1371 (stating that a court can consider extrinsic evidence to help the court “in comprehending the technology in accordance with the understanding of skilled artisans and as necessary for actual claim construction,” but that extrinsic evidence cannot be relied upon to the extent that it “contradict[s] the clear meaning of terms in the claims.”).

## DISCUSSION

The parties disagree in regards to the construction of two phrases in the various claims. Mitutoyo also proposes that the court should construe fifteen additional terms and phrases in order to make them more understandable to the jury.

### I. Signal Generator Means

Central argues that the term “signal generator means” should be construed as a means-plus-function claim. Means-plus-function claims are governed by 35 U.S.C. § 112 ¶ 6 (“§ 112 ¶ 6”), which states the following:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112 ¶ 6. Patent applicants can use means-plus-function limitations “to claim an element of a combination functionally, without reciting structures for performing those functions.” *Apex Inc.*, 325 F.3d at 1371. If the word “means” is used in a claim there is a rebuttable presumption that § 112 ¶ 6 applies. *Id.* This presumption can be rebutted by showing that: 1) a claim element utilizes the word “means,” but fails to recite[] . . . [a] function corresponding to the means,” or 2) although “the claim element specifies a function, . . . it also recites sufficient structure or material for performing that function. . . .” *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1347 (Fed. Cir. 2002); *Apex Inc.*, 325 F.3d at 1372. The burden

upon the party seeking to rebut the presumption is the preponderance of the evidence standard. *Id.*

In the instant action, Claim 1 of the '902 Patent states the following: "signal generator means have n number of signal outputs, each of the supply electrodes in each group being connected to a respective one of said signal outputs whereby all supply electrodes are suppl[ied] with voltages according to a cyclic pattern." The first claim of the '902 patent claims a "signal generator means having n number of signal outputs," which clearly creates the presumption that this is a means-plus-function claim. Thus, Mitutoyo must either show that the claims specified no corresponding function for the "means," or show that the claims specified sufficient structure or material for performing the function.

The Federal Circuit has found in some cases that the means-plus-function presumption was rebutted. For instance, in *Envirco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360 (Fed. Cir. 2000) the Court addressed the use of the phrase "second baffle means" in the claims of a patent. *Id.* at 1364. The court in *Envirco* found that there was a presumption that the claim at issue was a means-plus-function claim, but the Court also noted that the term "baffle" itself indicated structure, "meaning a surface which deflects air. . . ." *Id.* at 1365. The Court in *Envirco* held that there was sufficient structure specified to overcome the presumption. *Id.* at 1364-65. In *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524 (Fed. Cir. 1996) the Court addressed the phrase "perforation means . . . for tearing" contained in a claim. *Id.* at 531. The Court in *Cole* noted that the element of the claim "fail[ed] to satisfy the

statute because it describe[d] the structure supporting the tearing function (i.e., perforations)” and because “[t]he claim describe[d] not only the structure that supports the tearing function, but also its location (extending from the leg band to the waist band) and extent (extending through the outer impermeable layer).” *Id.* The Court affirmed the District Court’s ruling that the means-plus-function presumption was rebutted. *Id.*

The Federal Circuit has also found in certain instances that the means-plus-function presumption was not rebutted. For instance, in *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420 (Fed. Cir. 1997) the Court analyzed the phrases “closure means” and “movable closure means.” *Id.* at 1428. The Court noted that the claims at issue stated a function for the “means” which was the “closing slot means” and the Court noted that the claims “require[d] that the closure means perform the additional functions of ‘controlling access’ to the slot (claim 1) or being ‘selectively movable between an open access and closed access position’ (claim 10).” *Id.* The Court found that “[n]either claim explicitly recite[d] the structure, material, or acts needed to perform these functions” and held that the means-plus-function presumption had not been rebutted. *Id.*

Mitutoyo first argues that there is no corresponding function for the “means” claimed in the ‘902 Patent. It argues that there is a significant difference between “signal generator means” and “signal generating means,” the first being a device, and the second being a function. Mitutoyo argues that the absence of the word “for” in the claim shows that a function is not included in the claim. Mitutoyo contends that



“[t]here is no means for performing a function in this limitation.” (Mit. Cl. Contr. 15). Central responds that “to generate n number of signals, each having a cyclic pattern” is the corresponding function. Central further asserts that Mitutoyo is merely attempting to remove the word “means” from the claim, and that Mitutoyo’s reliance on this distinction between “generator” and “generating” is without precedent.

Mitutoyo’s claim is most similarly structured to the patent in *Cole*, which essentially claimed “perforation means,” followed by language describing how those perforation means were situated amongst the other elements, and ended with the function (tearing). Similarly, Mitutoyo’s patent claims “signal generator means,” followed by language explaining how those signal generator means are situated amongst the other elements (having n number of signal outputs, each of the supply electrodes in each group being connected to...), and finishes with the function, “suppl[ied] with voltages.”

Central’s purported function requires a leap of the imagination. While the verb “generate” is not present in the claim, Central nevertheless argues that this non-existent verb should be construed into the claim as generating n number of signals. “[S]uppl[ied] with voltage,” in contrast, contains a verb (albeit in passive voice) which serves as a much more obvious source of a corresponding function. Thus, we hold that the corresponding function to the “means” term in Mitutoyo’s claim is to supply the electrodes with voltages.

The more difficult query is whether the claim recites sufficient structure to

overcome the means-plus-function presumption since the term “means” is used in the claim. Mitutoyo points to the language such as “having n number of signal outputs,” and more particularly, those outputs “being connected” to supply electrodes, to support its argument of sufficient structure. Mitutoyo also argues that “signal generator” had an understood structural meaning (“a variety of devices that generate one or more electrical signals”) in the relevant art at the time the application was filed in the PTO. To emphasize their structural nature, Mitutoyo lastly refers to the dictionary definitions of the terms “signal”, “a detectable physical quantity or impulse . . . by which messages or information can be transmitted,” and “generator,” “one that generates, causes or produces.” *Webster’s Third New International Dictionary* (1971).

Central counters that the language of the claim does not contain sufficient structure to accomplish the function of “generating n number of signals, each having a cyclic pattern.” Moreover, Central asserts that “signal generator” should only be construed as generating one signal, and therefore Mitutoyo’s claim language is insufficient “to perform entirely the recited function.” *Sage Prods.*, 126 F.3d at 1428. Because there is no bright-line rule separating sufficient recitation of structure from insufficient recitation of structure, we shall compare the language of claim 1 to that of the cases above. First, and most importantly, similar to the phrase “baffle means,” examined in *Envirco*, the phrase “signal generator” imparts a definition of structure. Combining the dictionary definitions of the terms “signal” and “generator” results in “one that generates, causes or produces . . . a detectable physical quantity or impulse

... by which messages or information can be transmitted.” This is structural language. Furthermore, despite Central’s assertions to the contrary, there is no reason to construe “signal generator” as only generating one signal. The claim language explicitly claims *n* electrodes to connect to *n* signal outputs. The drafter of the patent no doubt did this in order to avoid limiting the scope of the claim to a single number. Had the drafter of the patent done otherwise, an aspiring infringer could merely change the number of electrodes and signal outputs to avoid infringing the ‘902 patent. Finally, unlike in *Sage Products* where no structure was recited, and similar to the situations in *Cole* and *Envirco*, Claim 1 recites “having *n* number of signal outputs,” with those outputs “being connected” to supply electrodes. This structure, in conjunction with the structural dictionary definition of “signal generator,” shows by a preponderance of evidence that the means-plus-function presumption is rebutted. Therefore, since the phrase “signal generator means” is not governed by § 112 ¶ 6, it will be construed as “an electronic unit that generates one or more output signals.”

## II. Cyclic Pattern

The other disputed phrase in this action is the phrase “cyclic pattern.” It appears in the same claim limitation as the previous disputed term. Mitutoyo seeks one of the following similar constructions: 1) “a signal pattern which repeats from one group of supply electrodes to the next; the sequence of the signals is the same in each group of supply electrodes,” or 2) “each member of a group of supply

electrodes receives a different signal but the sequence of signals is the same from group to group.” In contrast, Central seeks to define “cyclic pattern” as “the graphical pattern traced by one complete performance of an electrical oscillation.”

The statement “all supply electrodes are suppl[ied] with voltages according to a cyclic pattern” is ambiguous as to whether *each* electrode is supplied with voltages according to a cyclic pattern (Central’s construction), or alternatively, whether cyclic describes the pattern in which all the electrodes are supplied with voltages (Mitutoyo’s construction).

Therefore, in accordance with the guidance provided in *Texas Digital* we shall utilize a dictionary to ascertain the ordinary meaning of the term. Merriam-Webster’s defines cyclic as follows: “of relating to, or being *acycle*.” *Webster’s Third New International Dictionary* (1986). A look at the multiple definitions of cycle results in the two following possible definitions: (1) “an interval of time during which a sequence of a recurring succession of events or phenomena is completed,” or (2) “one complete performance of a vibration, *electric oscillation*, current alternation, or other periodic process.” *Id.* (emphasis added). The first definition seems to favor Mitutoyo’s proposed construction, while the second closely resembles Central’s proposed construction.

When a court is confronted with multiple dictionary definitions of a claim term, the court should examine the intrinsic record “to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor” and “[i]f more than one dictionary definition is

consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings.” *Texas Digital Systems, Inc.*, 308 F.3d at 1203. The specification states that “[t]he oscillator 29 could be designed so as to generate sinus shaped voltages.” This lends at least some weight to Central’s construction, albeit simply as a possible embodiment of the invention. While the specification offers no such support to Mitutoyo’s proposed construction, the prosecution history does. The patentee used “cyclic pattern” in PTO proceedings as follows: “cyclic pattern, i.e., each electrode within the group must be connected to a different supply voltage,” and not as describing an electric oscillation. While the above specification discloses that the oscillator could optionally supply sinus shaped voltages, the prosecution history more definitively illustrates how cyclic pattern should be construed. Therefore, the more definitive statement contained in the prosecution history is the most instructive.

This conclusion is further supported by the doctrine of claim differentiation which provides that “two claims of a patent are presumptively of different scope.” *Kraft Foods, Inc. v. International Trading Co.*, 203 F.3d 1362, 1366-67 (Fed. Cir. 2000). Claim 2 of the ‘902 patent encompasses the measuring device of claim 1 “wherein said signal generator means . . . generates *nperiodic* signals of the same amplitude and frequency. ‘902 Patent. The term “Periodic” is actually contained in the dictionary definition of cycle that most resembles Central’s proposed definition of: “electric oscillation ...or other *periodic* process.” *Webster’s Third New International Dictionary* (1986). Central’s proposed construction would seem to

require that each electrode be supplied with periodic voltages, i.e., in a cyclic pattern. Thus, if this court were to adopt Central's proposed construction, Claims 1 and 2 will have the same scope, directly contrary to the doctrine of claim differentiation. Therefore, we conclude that Mitutoyo's proposed construction is correct which provides: "a signal pattern which repeats from one group of supply electrodes to the next; the sequence of the signals is the same in each group of supply electrodes."

### III. Additional Undisputed Claims

Mitutoyo lastly requests that this court construe an additional 15 claims. Central argues that this is unnecessary because there is no dispute over the claims, and that technical tutorials and expert testimony will educate the jury sufficiently. We agree. For instance, Mitutoyo asks that the term "scale" be construed as "the part relative to which the slide slides, and which includes the scale electronics." This proposed construction is explanatory in nature, does not affect the scope of the claim, and can be effectively explained to the jury without construction. Even more illustrative is Mitutoyo's proposed construction of "capacitive determination" which is: "The measurement of the relative position between two parts of a measuring device based on the changes in capacitance between electrodes located on the two parts of the measuring device which form capacitors (i.e., capacitive effect), the two parts being movable relative to each other." An electrode is an electric conductor which provides and/or receives electric signals. A capacitor is a device including two conductors insulated from each other by a dielectric, such as air.

Capacitance, or capacity, is a property of a capacitor which determines how much charge can be stored in that capacitor for a given potential difference between its terminals, i.e., the ratio of a charge on one of the conductors of a capacitor (there being an equal and opposite charge on the other conductor) to the potential difference between the conductors. The potential difference is the work required to move a charge across the field created by the capacitor. The jury will be better served if Mitutoyo simply explains all this in a presentation. Since the parties will have the chance to explain such matters to the jury, we deem it is unnecessary for the court to construe the fifteen additional claims addressed by Mitutoyo.

### CONCLUSION

Based on the foregoing analysis, we find that the phrase “signal generator means” is not a means-plus-function element, and therefore is interpreted as one of ordinary skill in the art would likely interpret it with is as an electronic unit that generates one or more output signals. We also construe the phrase “cyclic pattern” as “a signal pattern which repeats from one group of supply electrodes to the next; the sequence of the signals is the same in each group of supply electrodes.” Finally, we conclude that construction by the court of the fifteen additional undisputed claims identified by Mitutoyo is not warranted.

  
Samuel Der-Yeghiayan  
United States District Court Judge

Dated: March 3, 2005